

### **REMARKS**

This Amendment responds to the Office Action dated December 11, 2003 in which the Examiner rejected claims 1-25 under 35 U.S.C. § 102(e).

Applicants respectfully request the Examiner acknowledge the priority documents filed September 17, 1999.

As indicated above, claim 1 has been amended in order to incorporate claim 2, part of claim 22, and claim 23. Applicants respectfully submit that there are no new issues for consideration. Furthermore, the Amendment is unrelated to a statutory requirement for patentability.

Claim 1 claims a vehicle-mounted communication device comprising a transmitting/receiving means and a relay means. The transmitting/receiving means is provided for communication of information with road-side communication means located at a road side. The vehicle-mounted communication device is not provided with encryption means for decoding encryption information. The encryption information is passed through the vehicle-mounted communication device in an undecided state. The relay means is for relaying encryption information, received from the road side by the transmitting/receiving means, to an IC card. The IC card includes a) storage means for storing user information regarding a balance of charges and b) encryption means that encrypts and outputs output information based on the user information and decodes encrypted input information regarding the user information. The relay means relays the output information encrypted by the IC card to the transmitting/receiving means. An ID of the vehicle is stored in the vehicle-mounted communication device for corresponding the vehicle and the

vehicle-mounted communication device. A certified key code is stored in the IC card for corresponding the vehicle-mounted communication device and the IC card.

Through the structure of the claimed invention having an ID of a vehicle stored in the vehicle-mounted communication device for corresponding the vehicle and the vehicle-mounted communication device and a certified key code stored in a IC card for corresponding the vehicle-mounted communication device and the IC card as claimed in claim 1, the claimed invention provides a vehicle-mounted communication device that can improve security. The prior art does not show, teach or suggest the invention as claimed in claim 1.

Claims 1-7 and 10-23 were rejected under 35 U.S.C. § 102(e) as being anticipated by *Hoshino et al.* (U.S. Patent No. 6,088,680).

*Hoshino et al.* appears to disclose a system for automatically adjusting a fee such as a toll for a toll road. (col. 1, lines 11-12) FIG. 1 is a block diagram showing a toll automatic adjusting system. In FIG. 1, reference numeral 1 denotes a storage medium for storing adjustment information which is retained by users and is necessary for toll adjustment. In an automatic toll adjusting system of this invention, information is exchanged between the storage medium 1 and a toll adjusting gate employing a first toll payment system by radio communication at a first predetermined frequency to automatically adjust a toll in the first toll payment system. On the other hand, information is exchanged between a storage medium 2 and a toll adjusting gate employing a second toll payment system in radio communication at a second predetermined frequency to automatically adjust a toll in the second toll payment system. The storage medium 1 shown in FIG. 1 has a radio communication function to exchange information with the outside by radio

communication at the first predetermined frequency. In FIG. 1, reference numeral 2 denotes a frequency converting apparatus, and 3 denotes a vehicle. The frequency converting apparatus 2 is mounted on the vehicle 3 travelling on a toll road. When the storage medium 1 is inserted therein, the frequency converting apparatus 2 converts information at the first predetermined frequency, supplied from the storage medium 1, into the second predetermined frequency to transmit it to the outside by radio communication. The frequency converting apparatus also converts information at the second predetermined frequency, supplied from the outside, into the first predetermined frequency to transmit it to the storage medium 1 by radio communication. (col. 7, line 50 through col. 8, line 12) The information written in the storage medium 1 is enciphered with a predetermined encipherment key to be enciphered data, and the predetermined encipherment key which is in a state of plain-text (in a state where the encipherment key is not enciphered) is set and stored in the storage medium 1. The enciphered data for information that is an object of a read demand or a write demand includes the enciphered encipherment key obtained by enciphering the plain-text predetermined encipherment key with the predetermined encipherment key. In the storage medium 1, a password, an identification number and a term of validity in terms of the storage medium 1 are set and stored in advance. (col. 9, lines 26-38) The storing means 1A retains a) information which is in a state of enciphered data which is obtained by enciphering the information with a predetermined encipherment key from the outside and b) the predetermined encipherment key in a state of plain-text. The storing means also sets and stores a password therein in advance. When receiving a read demand from the outside through the receiving means 1B, the processing means 3C reads

out a) enciphered data for the information that is an object of the read demand and b) a plain-text predetermined encipherment key, and transmits them through the transmitting means 1D. The storage medium 1 further includes a) a deciphering means for deciphering an encipherment key that was used to encipher the enciphered data and is included in the enciphered data for information that is an object of a write demand on the basis of the plain-text predetermined encipherment key which is stored in the storing means 1A when the storage medium 1 receives the write demand transmitted from the outside corresponding to transmission of the information that is an object of the read demand by a receiving means 1B, and b) an encipherment key check means for comparing 1) the encipherment key which is deciphered by the deciphering means and 2) the plain-text predetermined encipherment key which is stored in the storing means 1A to check the information that is an object of the write demand. The storage medium 1 may further include a password check means. When the storage medium 1 receives a read demand accompanied by a password through the receiving means 1B during a depositing process for toll pre-payment, the password check means compares the password accompanying the read demand with the password stored in the storing means 1A to check on a payer. The storage medium 1 may still further include a second password check means. When the storage medium 1 receives a password input through the frequency converting apparatus 2 when inserted into the frequency converting apparatus 2, this second password check means compares the received password with a password stored in the storing means 1A to check on a user (i.e., user and payer may be the same or may be different). (col. 14, line 46 through col. 15, line 19)

Thus, *Hoshino et al.* merely discloses a storage medium 1 which includes a deciphering means for deciphering an encryption key used to encrypt data, a password used to check on a payer and a second password checking means which is used to check a user (column 14, line 58 through column 15, line 19). Thus, nothing in *Hoshino et al.* shows, teaches or suggests a) an ID of a vehicle is stored in a vehicle-mounted communication device, b) the ID of the vehicle is used to correspond the vehicle and the vehicle-mounted communication device, c) a certified key code, which is stored in an IC card, used for corresponding the vehicle-mounted communication device and the IC card as claimed in claim 1. Rather, *Hoshino et al.* merely discloses a storage medium which has a deciphering means for deciphering an encryption key, a password checking means for comparing a password stored in the storage means in order to check a payer and a second password checking means which compares a received password with a password stored therein to check on a user (i.e., the frequency converting means converting apparatus 2 of *Hoshino et al.* does not store a ID of a vehicle where the ID of the vehicle corresponds the vehicle and the vehicle-mounted communication device and furthermore the password in *Hoshino et al.* stored in the storage medium is not used to correspond the vehicle-mounted communication device and the IC card).

Additionally, *Hoshino et al.* merely discloses an indirect communication method in which a first frequency is converted by a frequency converting apparatus 2 into a second frequency. In other words, information from the storage medium 1 is converted in the on-vehicle apparatus 2, 20. However, as claimed in claim 1, encryption information is passed through the vehicle-mounted communication device

in an undecoded state. *Hoshino et al.* when using the frequency converting apparatus 2 changes or converts the information therein.

Finally, *Hoshino et al.* merely discloses in the case of direct radio communication between the storage medium 1 and the roadside device, information from the storage medium is directly exchanged. Thus, a vehicle-mounted device is not necessary in *Hoshino et al.* for direct exchange such that the first frequency does not pass through a vehicle-mounted communication device contrary to what is claimed in claim 1.

Since nothing in *Hoshino et al.* shows, teaches or suggests a) an ID of a vehicle stored in a vehicle-mounted communication device, b) an ID of a vehicle is used for corresponding a vehicle and a vehicle-mounted communication device, c) a certified key code, is stored in an IC card, for corresponding vehicle-mounted communication device and the IC card and d) encryption information is passed through the vehicle-mounted communication device in an undecoded state as claimed in claim 1, Applicants respectfully request the Examiner withdraws the rejection to claim 1 under 35 U.S.C. § 102(e).

Claims 3-7, 12, and 14-22 depend from claim 1 and recite additional features. Applicants respectfully submit that claims 3-7, 12 and 14-22 would not have been anticipated by *Hoshino et al.* within the meaning of 35 U.S.C. § 102(e) at least for the reasons as set forth above. Therefore, Applicants respectfully request the Examiner withdraws the rejection to claims 3-7, 12, and 14-22 under 35 U.S.C. § 102(e).

Since claim 1 has been amended to incorporate features already considered by the Examiner in claims 2, 22 and 23, Applicants respectfully submit that there are no new issues for the Examiner to consider.

Thus it now appears that the application is in condition for reconsideration and allowance. Reconsideration and allowance at an early date are respectfully requested. Should the Examiner find that the application is not now in condition for allowance, Applicants respectfully request the Examiner enters this amendment for purposes of appeal.

If for any reason the Examiner feels that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed within the currently set shortened statutory period, applicants respectfully petition for an appropriate extension of time. The fees for such extension of time may be charged to our Deposit Account No. 02-4800.

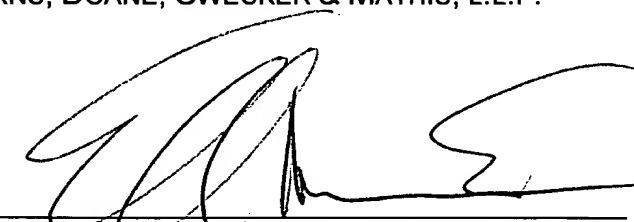
In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: May 10, 2004

By:

A handwritten signature in black ink, appearing to read 'Ellen Marcie Emas', written over a horizontal line.

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